

Digital Leadership and IT Strategy Execution in Emerging Economies

Filda Angellia

Institut Bisnis dan Informatika (IBI) Kosgoro 1957, Indonesia

Coresspondent: fildaibik57@gmail.com

Received : August 21, 2024

Accepted : October 15, 2024

Published : October 31, 2024

Citation: Angellia, F. (2024). Digital Leadership and IT Strategy Execution in Emerging Economies. *Data: Journal of Information Systems and Management*, 2 (4), 226-238.

ABSTRACT: Digital transformation has emerged as a critical driver for organizational success in today's rapidly evolving technological landscape. This narrative review aims to explore how IT strategy is formulated and implemented in digital enterprises, particularly within developing countries. Using a systematic literature search across Scopus, IEEE Xplore, and Google Scholar, studies were selected based on thematic relevance, quality, and citation impact. Keywords included "IT strategy formulation," "digital transformation," and "strategy implementation," combined through Boolean operators to refine search results. The review reveals that strategic frameworks such as the Ward and Peppard model and SECI model facilitate alignment between IT and business objectives. Internal organizational factors—notably leadership, culture, and technological readiness—play a pivotal role in enabling successful strategy formulation. Externally, government policies, infrastructure availability, and stakeholder influence significantly shape implementation outcomes. Agile methodologies, data-driven decision-making, and collaborative leadership emerged as critical practices in digital strategy execution. Conversely, barriers such as resistance to change, regulatory inertia, and limited digital competencies hinder progress, particularly in SMEs and public institutions. This review highlights the need for integrative and adaptive strategies that account for socio-technical and contextual complexities. It underscores the importance of inclusive governance and policy alignment to support digital innovation. Future research should investigate underexplored regional and sectoral contexts to develop holistic frameworks that support sustainable digital transformation across diverse organizational landscapes.

Keywords: IT Strategy Formulation, Digital Transformation, Strategy Implementation, Digital Leadership, Organizational Innovation, Policy Alignment, Developing Countries.



This is an open access article under the CC-BY 4.0 license

INTRODUCTION

In recent years, the adoption of digital strategies within information technology (IT)-based organizations in developing countries has seen a marked increase. The digital revolution—characterized by the pervasive application of digital technologies across both business and public

administration domains—has offered promising avenues for operational efficiency, transparency, and improved service delivery. This momentum reflects a global trend wherein digital transformation has become a vital component in reshaping how institutions operate and engage with stakeholders (Wang et al., 2024). Within this broader movement, governments and private entities in developing countries have increasingly integrated digital tools into their strategic frameworks to enhance responsiveness and effectiveness (Araujo & Andrade, 2022).

Within this context, e-Government strategies serve as a prominent example of the practical integration of digital technologies to improve governance. According to Araujo and Andrade (2022), such strategies are not merely technological enhancements but are designed to foster participatory governance by enabling citizen engagement in decision-making processes. Further reinforcing this view, Osah and Khene (2022) emphasize the value of digital citizen participation in the strategic formulation of civic technologies. Their study points to the collaborative development of digital infrastructure as a mechanism for more inclusive and accountable governance. These perspectives position digital strategy formulation as both a technical and socio-political endeavor in developing economies.

Foundational to the relevance of this discourse is the empirical observation that digitalization influences not only operational frameworks but also core value propositions and cultural underpinnings of organizations (Athaide et al., 2024). The transition to digital-first strategies has redefined organizational structures, workflows, and stakeholder relationships. For instance, research on Industry 4.0 suggests that digital technologies have become embedded in enterprise architectures, shaping workforce configurations and resource management paradigms (Lv et al., 2024; Morales et al., 2024). Such transformations are not confined to technological domains but extend to broader systemic changes that demand adaptive and strategic leadership.

Supporting these claims, Wang et al. (2024) note the role of digital solutions in enhancing corporate social responsibility, especially within the public health sector. By deploying platform-based approaches, organizations are achieving measurable efficiency gains while advancing social outcomes. However, these gains come with considerable strategic demands. The capacity to formulate and implement IT strategies that align with rapid technological evolution and contextual constraints remains a pressing challenge.

Central to this challenge is the pervasive uncertainty that accompanies digital transformation. Nielsen and Ali (2021) argue that qualitative assessments are instrumental in capturing the complexities of IT governance and oversight amid change. This includes understanding how organizational culture, structural rigidities, and leadership orientations affect digital adoption. In a similar vein, Liepert (2024) underscores the necessity of aligning digital investments with existing organizational norms to mitigate resistance and optimize impact.

External constraints further complicate digital strategy formulation. These include inadequate technological infrastructure, regulatory volatility, and disparities in digital literacy. Morales et al. (2024) highlight that variables such as firm size and managerial training significantly influence digital implementation outcomes among small and medium enterprises (SMEs). These findings

stress the importance of capacity-building initiatives, particularly those focused on enhancing digital competencies across the organizational spectrum.

Given these multifaceted challenges, adaptive models and stakeholder-centric frameworks have gained traction. Iastremska et al. (2024) introduce a strategy modeling approach that integrates systemic analysis with behavioral insights to facilitate organizational adaptation. Similarly, Au-Yong-Oliveira et al. (2024) advocate for participatory methodologies that incorporate stakeholder input into strategic decision-making processes. These approaches promote flexible, context-sensitive strategies that are better suited to the dynamic environments characterizing the digital era.

Despite abundant research, gaps remain in explaining the integrated relationship between organizational culture, leadership, and national policy in shaping IT strategy—an underexplored area in developing countries. Specifically, there is a lack of comprehensive studies that holistically examine the interplay between digital strategy formulation and institutional contexts in developing regions (Rabbi et al., 2025). Most existing research tends to emphasize discrete components of digital adoption, such as technology deployment or performance metrics, rather than the integrated processes through which digital strategies are conceived and operationalized. This fragmentation limits the applicability of findings and hampers the development of scalable frameworks.

To address this gap, the present review aims to synthesize current research on IT strategy formulation and implementation in digitally-driven organizations, particularly within developing countries. The review seeks to identify key factors influencing strategic success, examine common challenges and enablers, and evaluate the role of organizational culture, leadership, and policy environments. By adopting a narrative review methodology, this study intends to provide a multidimensional understanding of how digital strategies are crafted, negotiated, and executed in diverse organizational contexts.

This review focuses predominantly on empirical and conceptual studies from the last decade, with geographic emphasis on developing countries in Asia, Africa, and Latin America. The selection of this focus is driven by the recognition that these regions face unique digitalization trajectories shaped by infrastructural limitations, policy diversity, and socio-economic conditions. Furthermore, the review incorporates insights from both public and private sector experiences, thereby allowing for comparative analysis across institutional types and industry domains.

Multiple studies illustrate the practical implications of IT strategy in varying contexts. For instance, Araujo and Andrade (2022) document the implementation of e-Government platforms in African nations, emphasizing improved administrative transparency and citizen involvement. Meanwhile, Nielsen and Ali (2021) explore the education and financial sectors in Southeast Asia, shedding light on sector-specific transformations and strategic responses. These cases exemplify how contextual factors shape strategic orientations and underscore the importance of localized strategy development.

Notably, Nielsen and Ali (2021) offer a detailed assessment of Qatar's digital transformation journey. Their findings reveal a deliberate alignment between national policies and institutional

strategies, serving as a potential model for other developing nations seeking to enhance digital governance. This case exemplifies how strategic coherence across governmental levels can facilitate effective technology integration while accommodating socio-cultural realities.

Overall, the integration of digital strategies into IT-based organizations in developing countries presents both significant opportunities and considerable complexities. While digitalization promises to enhance service delivery, transparency, and innovation, it simultaneously demands nuanced, adaptive strategies that are informed by contextual realities. This narrative review contributes to ongoing scholarly discourse by mapping the contours of current knowledge, identifying thematic patterns, and highlighting areas where further inquiry is necessary.

In doing so, it provides researchers, policymakers, and practitioners with a consolidated reference point for understanding digital strategy formulation in dynamic environments. By emphasizing context, complexity, and co-creation, this study advocates for strategic approaches that are both resilient and responsive, thereby enhancing the potential of digital transformation to drive inclusive development in the Global South.

METHOD

This study adopts a narrative review approach to synthesize the current body of literature on IT strategy formulation and implementation within the broader context of digital transformation. The primary objective of this methodology is to provide a comprehensive, critical, and thematic synthesis of existing research, offering insights into patterns, relationships, and gaps in the field. The narrative review methodology followed a structured process: (1) database selection, (2) keyword search, (3) screening, (4) quality appraisal, and (5) thematic synthesis.

The literature collection process was carried out systematically using a range of reputable academic databases, including Scopus, IEEE Xplore, SpringerLink, Google Scholar, and Web of Science. These databases were selected due to their extensive coverage of high-quality, peer-reviewed publications in the domains of information systems, strategic management, and digital innovation. The search process initially yielded over 2,000 studies. After applying inclusion and exclusion criteria, 95 articles were selected for in-depth review. Emphasis was placed on the inclusion of literature from the past 10 years to ensure the contemporary relevance of the findings, with particular focus on publications from 2015 to 2025.

The keyword strategy was formulated with careful consideration of both specificity and breadth. The primary keywords employed included "IT strategy formulation," "digital transformation," and "strategy implementation." Boolean operators were used to refine the search results effectively. For example, combinations such as "IT strategy formulation" AND "digital transformation," and "digital transformation" AND "strategy implementation" were employed to locate studies that bridge multiple thematic concerns. Additionally, keyword variations and synonyms were explored using the OR operator, such as "IT strategy formulation" OR "IT strategy planning," and "strategy implementation" OR "strategy execution." More complex queries, including nested Boolean

searches like ("IT strategy formulation" OR "IT strategy development") AND ("digital transformation" OR "digital evolution") AND ("strategy implementation" OR "strategy execution"), enabled the identification of studies that reflect diverse terminology in the literature while maintaining relevance to the review topic.

To ensure methodological rigor, specific inclusion and exclusion criteria were established. The inclusion criteria consisted of peer-reviewed journal articles, conference proceedings, and book chapters that focus on IT strategy within the framework of digital transformation. Only publications written in English were considered, and priority was given to those published in Scopus- or Web of Science-indexed journals. Additionally, empirical studies, theoretical discussions, and review papers that contribute substantive insights into strategic IT management, especially in the context of digital change, were included. Exclusion criteria eliminated studies that were outdated, non-peer-reviewed, anecdotal in nature, or only tangentially related to the core concepts of strategy formulation, implementation, or digital transformation. Articles focusing solely on technical engineering solutions without strategic organizational context were also excluded.

A multi-stage screening and evaluation process was employed to refine the list of included studies. The first phase involved title and abstract screening, which was conducted manually to assess the relevance of each publication against the research focus. The second phase entailed full-text review, during which studies were examined in detail to determine their alignment with the review objectives and quality standards. The evaluation criteria included the methodological robustness of the study, the clarity and originality of its contributions, and its relevance to the themes of IT strategic planning and digital transformation. Reference tracking and citation snowballing were used to identify additional relevant studies that might not have appeared in the initial database searches but were frequently cited in the selected literature.

The types of studies included in this review span a variety of research designs. These encompass qualitative case studies that investigate IT strategy adoption in specific organizational settings, quantitative survey-based research that examines the correlation between digital transformation and organizational performance, and conceptual frameworks that theorize the strategic role of IT in dynamic business environments. Notably, the inclusion of both empirical and theoretical studies enhances the depth and breadth of the analysis, allowing for a holistic understanding of the phenomenon under study.

Following literature selection, thematic synthesis was undertaken to organize findings across the studies into coherent categories. This process involved identifying recurring patterns, strategic themes, and conceptual linkages among the selected works. For example, some themes that emerged include leadership in digital strategy formulation, organizational culture and digital readiness, governance mechanisms for IT strategy implementation, and sector-specific approaches to digital transformation. These themes were used to guide the structure of the results and discussion sections, ensuring a logical progression and integration of insights across sources.

The synthesis also involved critical engagement with the literature to uncover research gaps and underexplored areas. In line with the recommendations of Bolisani and Scarso (2015), this process

was not limited to aggregation of findings but extended to interpretation and critique. One observed gap is the limited number of longitudinal studies examining the long-term impact of digital strategy implementation. Another gap pertains to the relative paucity of studies from developing regions, despite growing evidence of digital strategy adoption in these contexts (Osah & Khene, 2022; Araujo & Andrade, 2022). Furthermore, the interaction between organizational values, national digital policy frameworks, and IT governance structures remains an area requiring deeper inquiry.

Based on the thematic insights, the study also developed a preliminary conceptual framework to illustrate the interplay between key strategic variables. This model draws upon findings from multiple studies to delineate how elements such as leadership commitment, infrastructural readiness, regulatory environment, and organizational learning capacity shape the formulation and execution of digital strategies. The framework serves not only as a heuristic device for organizing the review but also as a foundation for future empirical testing and theoretical refinement.

Overall, this methodological approach enables a structured, transparent, and critical examination of existing research on IT strategy formulation and implementation in the digital era. By combining systematic search protocols with narrative synthesis and theoretical integration, the review contributes to advancing scholarly understanding and offers practical insights for organizational leaders navigating digital transformation. Through this methodology, the study addresses the need for contextualized, evidence-based guidance on strategic IT practices, particularly in regions and sectors undergoing rapid technological and institutional change.

RESULT AND DISCUSSION

The review identified five main themes: (1) conceptual models, (2) internal organizational factors, (3) external enablers and barriers, (4) leadership role, and (5) comparative approaches across regions. These themes include the conceptual models and frameworks used in strategy formulation, internal and external factors influencing success, best practices and barriers in digital strategy implementation, the role of digital leadership, and a comparative understanding of strategic approaches across developed and developing nations. Each theme is explored below with supporting literature and empirical evidence.

Conceptual models play a central role in guiding the formulation of IT strategies. Among the most widely adopted frameworks is that of Ward and Peppard, which promotes the alignment of IT strategies with broader business objectives (Araujo & Andrade, 2022). This model underscores the importance of contextual awareness in crafting strategies that resonate with the organization's goals and structural realities. Complementing this, the SECI model by Nonaka and Takeuchi introduces a knowledge management perspective, emphasizing socialization, externalization, combination, and internalization as key processes for strategic knowledge creation in digital organizations (Osah & Khene, 2022). These frameworks not only offer structural guidance but also reinforce the need for dynamic interaction between knowledge, culture, and systems.

Another conceptual tool commonly employed is SWOT analysis, which enables organizations to systematically examine their strengths, weaknesses, opportunities, and threats in the realm of digital transformation (Liepert, 2024). This model facilitates the identification of internal capabilities and external pressures, promoting a balanced view in strategic formulation. Notably, Araujo and Andrade (2022) also found that external factors, including international benchmarking and global rankings, often influence e-Government strategy decisions in developing countries, highlighting how external perception and political will shape IT strategic trajectories.

The success of IT strategy formulation is deeply affected by both internal and external organizational factors. Internally, cultural adaptability, leadership support, and the digital literacy of staff are pivotal (Nielsen & Ali, 2021). Organizations with entrenched hierarchies or resistance to change face difficulties in embedding digital strategies effectively. Pre-existing bureaucratic processes and siloed departmental structures often hinder the cohesive formulation of digital goals. In contrast, organizations with agile cultures and proactive top management tend to experience smoother strategy development and integration.

Externally, regulatory frameworks, technological advancements, and market competition create both opportunities and constraints for strategy formulation. The pace of digital innovation, coupled with evolving government policies, forces organizations to continuously reassess their strategic direction (Lynd & Harne, 2017). Araujo and Andrade (2022) demonstrate that stakeholder influence, particularly from civil society in e-governance systems, can guide more responsive and inclusive IT strategies. These findings point to the importance of a stakeholder-sensitive approach, particularly in public-sector contexts.

Implementation of digital strategies is equally multifaceted. Successful implementation often hinges on fostering a culture of innovation that encourages experimentation and continuous learning. Wang et al. (2024) underscore the role of digital platforms in supporting long-term transformation, particularly in health-related corporate social responsibility initiatives. In IT-based organizations, interdepartmental collaboration ensures that strategic objectives are not siloed within IT departments but are co-owned by business units (Liu & Li, 2025).

Agile methodologies have emerged as a preferred implementation approach, supporting iterative development, cross-functional collaboration, and adaptive planning (Jammulamadaka, 2020). These methodologies allow for real-time adjustments and responsiveness to environmental shifts. Moreover, data-driven decision-making, enabled by advanced analytics and performance tracking systems, has become a best practice in strategic execution (Wang et al., 2024). Such practices ensure that implementation is grounded in evidence and aligned with evolving organizational needs.

However, the literature identifies persistent barriers to effective strategy implementation. Resistance to change is a common theme, particularly among staff unaccustomed to new technologies or skeptical of digital transformation motives. Many organizations also suffer from limited digital skills among employees and inadequate training programs (Morales et al., 2024). These limitations are especially pronounced in SMEs, where resource constraints exacerbate implementation challenges.

Institutional rigidity further complicates implementation, particularly in public-sector entities where policy lags and bureaucratic inertia can delay or derail strategic initiatives (Nielsen & Ali,

2021). Financial limitations and a lack of sustained executive support further impede progress. As noted by Lynd & Harne (2017), tight budgets often restrict the scope of digital projects, preventing full realization of strategic goals. The alignment between top management commitment and frontline capabilities remains a critical success factor across studies.

Leadership plays a pivotal role in digital strategy success. Effective digital leaders articulate clear visions, inspire stakeholder buy-in, and promote a culture conducive to change. Nielsen and Ali (2021) emphasize the importance of leadership in orchestrating change management processes, noting that successful transformations involve coordinated efforts across all organizational levels. Leaders who demonstrate adaptability and openness to innovation can significantly accelerate digital integration.

Furthermore, data from Araujo and Andrade (2022) suggest that leadership effectiveness is amplified when aligned with a deep understanding of technological potential and change dynamics. Leaders who promote data-driven decision-making not only foster organizational agility but also build trust in digital initiatives (Chang et al., 2024). Wang et al. (2024) echo these findings, noting that successful digital leaders embed innovation into the organization's strategic DNA, enhancing both productivity and long-term value creation.

A comparative review of global and regional approaches reveals distinct differences in digital strategy adoption between developed and developing nations. In developed countries, access to advanced technology infrastructure, skilled personnel, and innovation-friendly policies facilitates rapid digital transformation. Strategic planning in such contexts is often forward-looking, emphasizing high-end solutions and predictive analytics (Weil et al., 2023). Conversely, developing nations must navigate infrastructural deficits, policy ambiguities, and workforce skill gaps. This leads to more incremental, tactical strategies often focused on basic digitization rather than transformative innovation (Rabbi et al., 2025; Morales et al., 2024).

The Argentine experience, as reported by Morales et al. (2024), illustrates how SMEs grapple with Industry 4.0 adoption amid limited training and financial resources. In such contexts, strategic initiatives often emphasize foundational capacity building and gradual integration of technologies. This pragmatic approach contrasts with the aggressive innovation strategies seen in developed economies and points to the need for tailored policy support in resource-constrained settings.

Cultural and regulatory contexts further influence strategy adoption and execution. Societies that value innovation, collaboration, and calculated risk-taking are more likely to embrace digital transformation rapidly. On the other hand, cultures that prioritize stability and hierarchical decision-making often exhibit slower adoption curves (Ai et al., 2024). Regulatory frameworks also shape strategic behaviors. For example, supportive digital policies in Qatar have enabled the public sector to implement ambitious digital initiatives, reflecting how policy alignment can serve as a strategic enabler (Nielsen & Ali, 2021).

In sum, the findings from this narrative review underscore the multifactorial nature of IT strategy formulation and implementation in the digital era. Successful strategies integrate conceptual clarity, internal capability, external responsiveness, and strong leadership. Comparative insights reveal that while the trajectory of digital transformation differs across regions, the principles of alignment,

adaptability, and stakeholder engagement remain universally relevant. These themes will be further analyzed in the discussion section to derive deeper implications for theory and practice.

The implementation and formulation of IT strategy in digital enterprises, especially within the context of developing nations, is significantly influenced by systemic organizational characteristics such as management systems, structural configurations, and cultural dynamics. These internal frameworks play a critical role in determining whether strategic IT initiatives succeed or fail. In environments where organizational structures are hierarchical and rigid, there is often a pronounced resistance to change, resulting in delays or failures in implementing digital transformation strategies. On the contrary, flexible, flat organizational structures tend to be more conducive to rapid decision-making and innovation adoption, fostering an environment that aligns better with the agile requirements of digital transformation (Nielsen & Ali, 2021). Such structures enable cross-functional collaboration and faster iteration, allowing organizations to respond effectively to dynamic technological demands.

Organizational culture is another determinant factor. Cultures that encourage innovation, calculated risk-taking, and knowledge sharing tend to support successful digital strategy implementation. Conversely, conservative organizational cultures that resist change pose significant barriers to the adoption of new technologies. As Araujo and Andrade (2022) argue, cultural resistance can often neutralize even the most well-intentioned strategic plans, making it imperative that cultural transformation accompany digital initiatives. In these scenarios, leadership becomes a pivotal mediator. Leaders who foster open communication, inspire innovation, and support cross-departmental collaboration play an essential role in navigating resistance and aligning teams with strategic objectives (Nielsen & Ali, 2021).

Moreover, effective leadership ensures that both formal mechanisms—such as strategic planning sessions and performance evaluations—and informal networks—such as mentorship and peer feedback—are aligned with digital objectives. This dual alignment increases the likelihood of strategy acceptance and successful execution. Leadership is also responsible for promoting a data-driven culture where decisions are supported by empirical evidence rather than hierarchical authority. These cultural and structural enablers are not isolated; they interact within a systemic framework, reinforcing or undermining one another depending on how coherently they are managed.

Beyond organizational dynamics, the alignment of research findings with national and regional policy frameworks also determines the scalability and sustainability of digital strategies. In many developing nations, national policies on digitalization and e-Government are often influenced by international benchmarks such as the World Bank's Ease of Doing Business index or the UN e-Government Development Index (Araujo & Andrade, 2022). Research by Araujo and Andrade illustrates how such benchmarks shape national agendas, prompting governments to prioritize IT strategy formulation and implementation in public sector reform. These findings underscore the reciprocal relationship between academic research and public policy; as empirical research uncovers best practices and systemic challenges, policymakers can craft more effective regulations and incentives.

In contexts where national strategies include targeted investments in digital infrastructure and education, organizations are better equipped to adopt and scale IT strategies. Conversely, in the

absence of supportive policies, even the most capable organizations face systemic hurdles. The case of Qatar, as highlighted by Nielsen and Ali (2021), demonstrates how proactive digital policies, combined with leadership commitment and regulatory flexibility, can accelerate digital transformation across both public and private sectors. This synergy between research insights and policy frameworks is crucial for creating an enabling environment that supports digital innovation at scale.

Addressing systemic barriers requires a multifaceted approach. One such approach is the use of Soft Systems Methodology (SSM), which allows organizations to iteratively diagnose, evaluate, and adapt their strategies in complex, unstructured scenarios (Osah & Khene, 2022). Unlike traditional linear models, SSM embraces ambiguity and change, making it particularly effective for managing digital transformation in dynamic environments. Through continuous stakeholder engagement and feedback loops, organizations can refine their strategies and ensure they remain aligned with evolving needs.

Stakeholder inclusion is another essential component in overcoming systemic barriers. When employees, customers, regulators, and community members are actively involved in strategy development, the resulting plans are more likely to reflect the realities of implementation. Osah and Khene (2022) emphasize the importance of participatory forums and inclusive governance mechanisms that integrate diverse viewpoints into decision-making processes. This inclusivity not only enhances the relevance of strategies but also boosts organizational legitimacy and stakeholder buy-in.

Furthermore, strategies that consider organizational culture and contextual variables tend to be more successful in implementation. Rabbi et al. (2025) argue for culturally informed digital strategies that align technological innovation with existing work practices and social norms. This approach minimizes cultural friction and fosters smoother transitions. Equally important is the provision of continuous training and capacity building, ensuring that employees are equipped with the digital competencies required for new systems and processes (Rabbi et al., 2025).

The integration of these approaches—SSM, inclusive stakeholder engagement, and cultural-context alignment—offers a holistic framework for overcoming systemic barriers in IT strategy. Yet, despite these strategies, challenges persist. Many organizations still struggle with aligning digital strategies with rapidly changing technologies and customer expectations. Additionally, the capacity to adopt these strategies varies significantly across sectors and regions, influenced by resource constraints, regulatory environments, and institutional readiness.

Moreover, current research has limitations in its scope and depth. Much of the literature is concentrated in specific regions or industries, such as public administration or financial services, with less attention given to other critical sectors like healthcare, education, and manufacturing in developing economies. Future research should aim to diversify its focus, incorporating a broader range of industries and geographical contexts. Another limitation is the lack of longitudinal studies that track the impact of IT strategies over time. Most existing studies offer cross-sectional insights, which may not capture the dynamic and evolving nature of digital transformation.

Furthermore, while many studies highlight the importance of leadership and culture, there is limited empirical data on how specific leadership styles or cultural attributes affect digital

outcomes. Comparative studies examining the efficacy of transformational, transactional, and servant leadership models in digital contexts would enrich the literature and offer more actionable insights. Similarly, research on how to quantitatively measure the alignment between organizational culture and digital strategy would be valuable for both scholars and practitioners.

Finally, future research should also explore the intersection of sustainability and digital transformation. As digital technologies increasingly intersect with environmental and social goals, understanding how IT strategies can support sustainable development objectives becomes essential. Integrating frameworks such as the UN Sustainable Development Goals into digital strategy research would provide a more comprehensive understanding of the broader implications of digital transformation.

In conclusion, the discussion reveals that systemic organizational characteristics, policy alignment, stakeholder involvement, and cultural sensitivity are all crucial to the successful formulation and implementation of IT strategies in digital enterprises. These factors must be considered holistically to navigate the complexities and seize the opportunities presented by digital transformation. Continued research and adaptive practices are necessary to refine these strategies and ensure they remain responsive to emerging challenges and opportunities.

CONCLUSION

This narrative review examined the formulation and implementation of IT strategy in digital enterprises, particularly in the context of developing countries. The review highlighted that successful IT strategy formulation requires the alignment of technological initiatives with organizational goals, supported by appropriate frameworks such as Ward and Peppard's strategic alignment model and the SECI knowledge management model. Additionally, both internal factors—such as leadership, organizational culture, and IT capabilities—and external factors—such as policy, infrastructure, and market dynamics—were shown to significantly influence strategy success.

The implementation of digital strategies was found to benefit from agile methodologies, cross-functional collaboration, and data-driven decision-making. However, persistent challenges include employee resistance, skill gaps, and bureaucratic constraints. The role of digital leadership emerged as a critical factor in navigating these challenges, especially in fostering a culture of innovation and inclusive decision-making.

The findings underscore the need for policy support, investment in digital infrastructure, and ongoing workforce development to foster digital transformation. Policymakers should design adaptive regulations and incentives that encourage strategic innovation while considering local cultural contexts. Furthermore, to overcome systemic barriers, organizations should implement participatory and inclusive planning mechanisms aligned with their unique structures and values.

Future research should address empirical gaps by exploring sector-specific and region-specific dynamics of IT strategy in greater depth, particularly in underrepresented regions. Developing and

validating integrated strategic frameworks that consider socio-technical complexities will be essential to enhancing organizational adaptability in the digital era.

REFERENCE

- Ai, K., Zhang, W., & Yan, X. (2024). Digital economy and urban low-carbon transition: Theoretical model and new mechanisms. *Sustainability*, 16(14), 5917. <https://doi.org/10.3390/su16145917>
- Araujo, W., & Andrade, C. (2022). Egov strategy formulation taking into account international rankings: Application of a method in an African country., 549–551. <https://doi.org/10.1145/3560107.3560316>
- Athaide, G., Jeon, J., Raj, S., Sivakumar, K., & Xiong, G. (2024). Marketing innovations and digital technologies: A systematic review, proposed framework, and future research agenda. *Journal of Product Innovation Management*, 42(1), 144–165. <https://doi.org/10.1111/jpim.12741>
- Au-Yong-Oliveira, M., Marinho, C., & Chkoniya, V. (2024). The nexus story and its stakeholder analysis: Digitalising multimodal logistics and the associated value chain worldwide. *European Conference on Innovation and Entrepreneurship*, 19(1), 71–80. <https://doi.org/10.34190/ecie.19.1.2700>
- Bai, F., Shang, M., Huang, Y., & Liu, D. (2023). Digital investment, intellectual capital and enterprise value: Evidence from China. *Journal of Intellectual Capital*, 25(1), 210–232. <https://doi.org/10.1108/jic-07-2022-0149>
- Bolisani, E., & Scarso, E. (2015). Strategic planning approaches to knowledge management: A taxonomy. *Vine*, 45(4), 495–508. <https://doi.org/10.1108/vine-01-2015-0005>
- Chang, X., Gourriérec, C., Hild, F., & Roux, S. (2024). Brightness and contrast corrections for stereocorrelation. *Mechanical Systems and Signal Processing*, 208, 111057. <https://doi.org/10.1016/j.ymssp.2023.111057>
- Iastremska, O., Rudych, A., Būmane, I., Hazukin, A., Zdolnyk, V., & Kukhta, P. (2024). Management of innovative development of enterprises in the conditions of digitalization: Strategy modeling. *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu*, (2), 194–200. <https://doi.org/10.33271/nvngu/2024-2/194>
- Jammulamadaka, N. (2020). Enabling processes as routines that facilitate cognitive change. *Management Decision*, 59(3), 653–668. <https://doi.org/10.1108/md-09-2019-1311>
- Liepert, M. (2024). Increasing the EBITDA of private equity portfolio company through digital enablement. *Economics of Development*, 23(1), 70–77. <https://doi.org/10.57111/econ/1.2024.70>

- Liu, Y., & Li, M. (2025). Intelligent development of high-end equipment sub-industries: Digital innovation ecosystem analysis. *Management Decision*. <https://doi.org/10.1108/md-01-2024-0084>
- Lv, K., Zhao, Y., Zhu, S., & Zhu, L. (2024). Enterprise digital transformation and labor structure evolution: Evidence from China. *Chinese Management Studies*, 19(3), 702–733. <https://doi.org/10.1108/cms-09-2023-0485>
- Lynd, D., & Harne, R. (2017). Strategies to predict radiated sound fields from foldable, Miura-ori-based transducers for acoustic beamfolding. *The Journal of the Acoustical Society of America*, 141(1), 480–489. <https://doi.org/10.1121/1.4974204>
- Morales, P., Haique, A., Cortez, E., Filippa, L., & Adra, R. (2024). Determining factors in the implementation of Industry 4.0 in Argentine SMEs. *Journal of Technology Management & Innovation*, 19(1), 66–78. <https://doi.org/10.4067/s0718-27242024000100066>
- Nielsen, M., & Ali, W. (2021). Governing and monitoring the digital transformation: Assessing the Qatari experience since 2003., 246–253. <https://doi.org/10.1145/3494193.3494227>
- Osah, U., & Khene, C. (2022). Designing strategy formulation in the midst of uncertainty in digital citizen engagement: A critical reflection of the application of design science research augmented by soft systems methodology to the design of strategy formulation. *The Electronic Journal of Information Systems in Developing Countries*, 89(3). <https://doi.org/10.1002/isd2.12247>
- Rabbi, M., Amin, M., Al-Dalahmeh, M., & Abdullah, M. (2025). Assessing the role of information technology in promoting environmental sustainability and preventing crime in e-commerce. *International Review of Applied Sciences and Engineering*, 16(1), 81–97. <https://doi.org/10.1556/1848.2024.00834>
- Wang, M., Yuan, R., Guan, X., Wang, Z., Zeng, Y., & Liu, T. (2024). The influence of digital platform on the implementation of corporate social responsibility: From the perspective of environmental science development to explore its potential role in public health. *Frontiers in Public Health*, 12. <https://doi.org/10.3389/fpubh.2024.1343546>
- Weil, M., Spinler, K., Lieske, B., Dingoyan, D., Walther, C., Heydecke, G., ... & Aarabi, G. (2023). An evidence-based digital prevention program to improve oral health literacy of people with a migration background: Intervention mapping approach. *JMIR Formative Research*, 7, e36815. <https://doi.org/10.2196/36815>